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RECENT EXCAVATIONS AT LONG'S HILL, NEBRASKA

By ROBERT F. GILDER

Introduction

While pursuing archeological studies in the northern part of Douglas county, Nebraska, in October 1906, I chanced upon an excavation in a low tumulus similar to others in the neighborhood. Splinters of human bones lay about the edge of the excavation, which was somewhat more than three feet deep at the beginning of an examination that continued intermittently until ten fractured skulls and many fractured skeletal parts, as well as a few complete bones, had been collected.

When five of the crania had been taken, three of them showed a type new to me, as they exhibited massive supraorbital ridges and low foreheads. These five skulls with the skeletal parts were examined by Prof. Henry Fairchild Osborn, of Columbia University, who observed that two of them, which had been taken from a higher level in the hills than were the other three, differed in type from these others. Professor Osborn devoted special attention to the three skulls from the lower level, which he considered to be the remains of a very primitive people.

At the suggestion of Professor Osborn I asked assistance of Prof. Erwin H. Barbour, state geologist and curator of the museum of the University of Nebraska, in further work at Long's hill. Professor Barbour's first day's study at the mound resulted in his belief that the more primitive remains had been deposited, where found, by other than human hands. Five days of consecutive work resulted in finding dissociated skeletal parts at varying depths to eleven and one-half feet and thus strengthened his earlier conclusion.

The crania of the modern type were found resting upon an area of partially burned earth, or loess, of which the hill is composed. The more ancient type was found mostly below this fired earth. In no instance were parts of the so-called primitive type found nearer the surface than four feet, and at that depth only on the borders of the burial mound. The results gleaned by my personal work in 1906 consisted of a dozen fractured skulls, of apparently three types, indicating that a burial mound had been reared on the southern end of the Long's hill knoll over other human bones.

Long's hill is named after its owner, Mr Manuel Long. It was visited by Dr Aleš Hrdlička, the well-known anthropologist of the United States National Museum, who also examined the material, taken from the mound, in the museum of the University of Nebraska, to which institution I donated the specimens immediately after finding the first five skulls. In a monograph issued as Bulletin 33 of the Bureau of American Ethnology, Dr Hrdlička inclines to the belief that the bones are not of geological antiquity. He

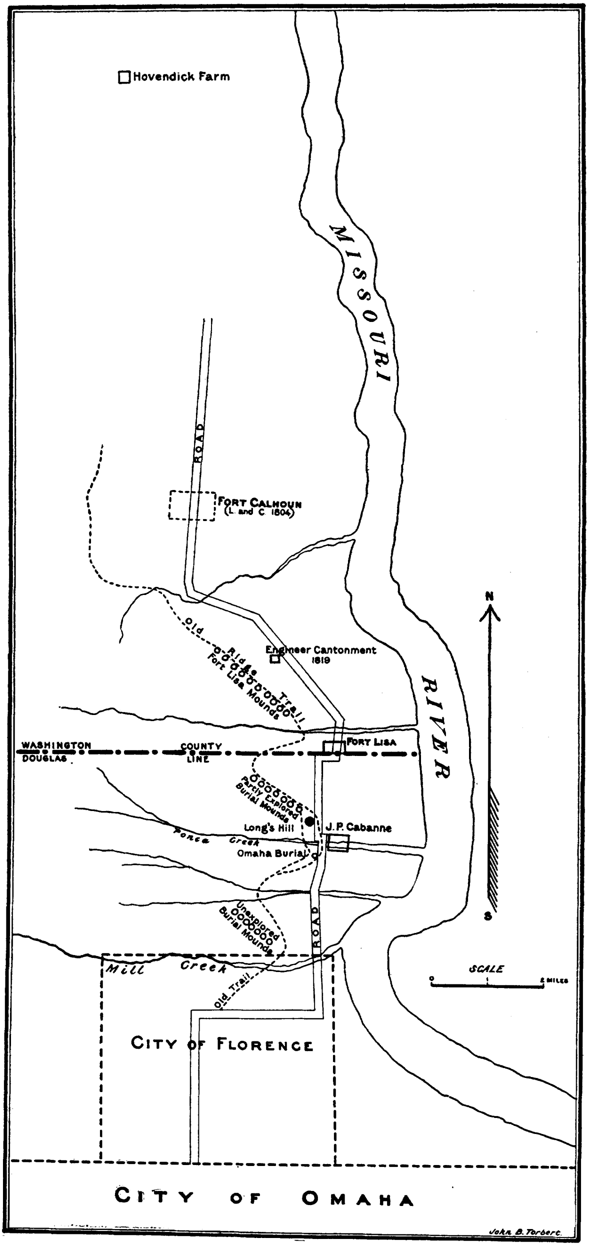

FIG. 29. — Long's hill and vicinity.

regards them as closely resembling the bones of the modern Indians, and with all the facts at hand believes it permissible to call them Indian.

THE RECENT EXCAVATIONS

In October 1907, I recommenced work at Long's hill, 12 miles north of Omaha, on a somewhat extensive plan. From time to time during the intervening twelve months since the finding of the so-called "Nebraska Man" was first made public, I visited the old excavation and noted that no one had attempted work there, this having been prevented by Mr Manuel Long, the owner of the prop-

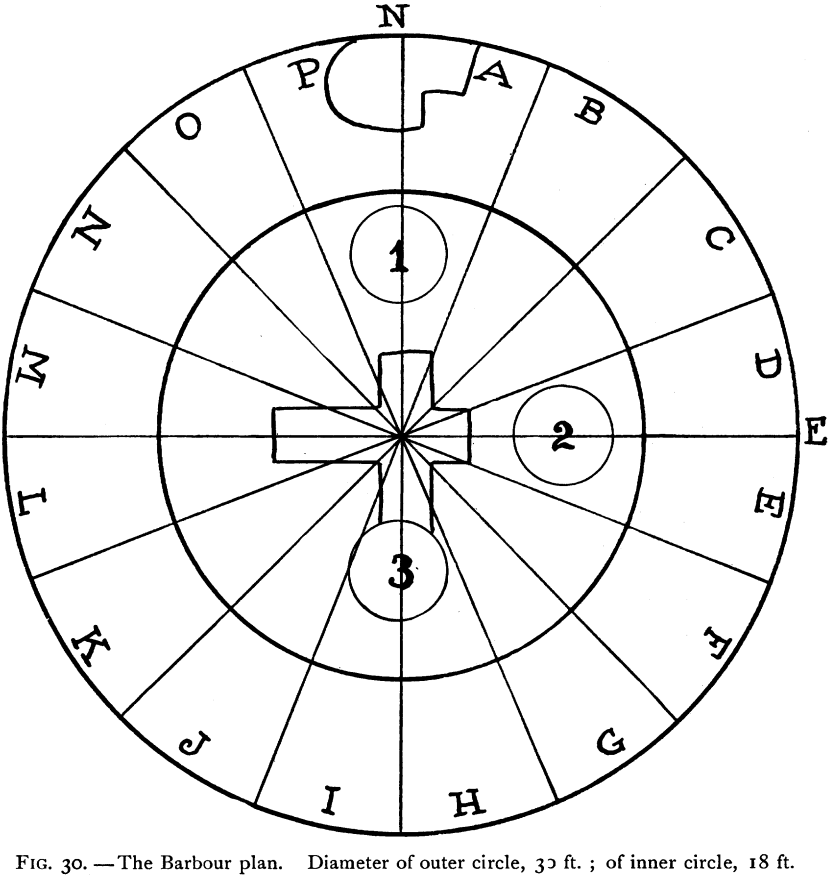

FIG. 30. —The Barbour plan. Diameter of outer circle, 30 ft. ; of inner circle, 18 ft.

erty. Mr Long readily allowed visitors to inspect the site however, and two distinct paths have been worn from the road to the edge of the excavation. Arrangements were made with a farmer living at the foot of the hill to permit any scientific investigator to make

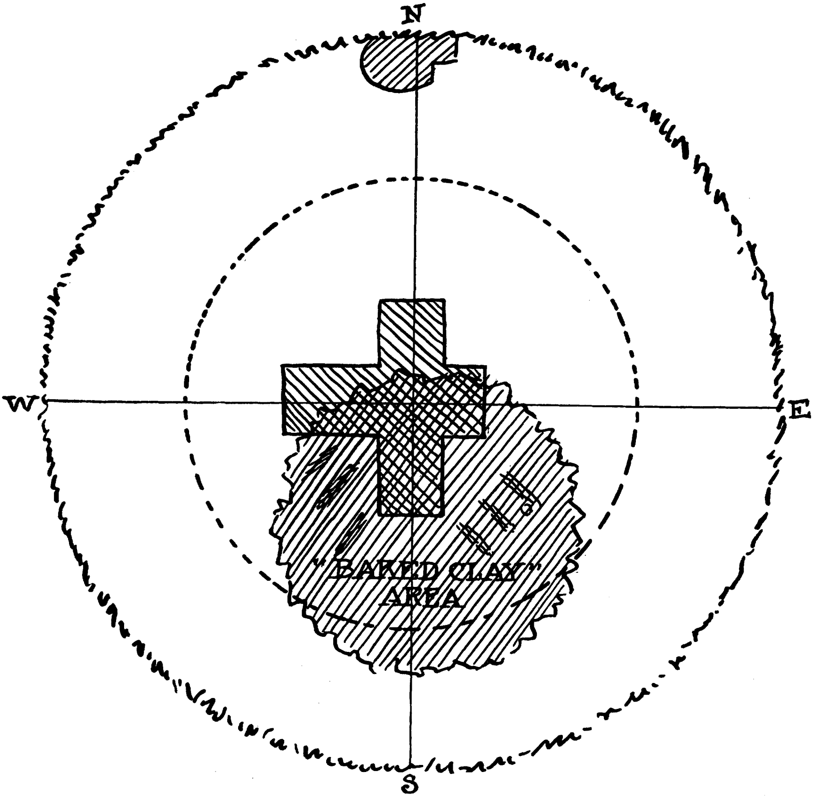

FIG. 31. — Author's plan. Outer circle, 30 ft.; inner circle, 18 ft. The cross in the center represents the original trenches; the small shaded circle indicates the burial mound showing baked clay area with positions of skeletons found lying thereon.

use of my tools should he desire to work there, but with the exception of Prof. Bohumil Shimek, of the University of Iowa, I believe no one took advantage of my offer. Hardly a week passed, winter or summer, without my visiting the hill, and during these visits critical examination was made of everything having the slightest bearing on the deposition of the various cranial and skeletal parts, so that when the work was recommenced I had as thorough a general knowledge of the conditions as could be gained.

On October 30 I began to cut through a section at the southeastern portion of the excavation, at the point where Dr Aleš Hrdlička had made such an attempt in January 1907, at a time when frost penetrated the ground for three feet, making it impossible to do more than mark the earth.

When the wide trench had reached four and one-half feet southward from the point of beginning a skeleton was encountered at a depth of four feet three inches beneath the original surface. The bones lay together, with femurs reversed, the longer bones on top of the vertebræ and ribs, the general direction of the skeleton extending southeast and northwest. The skull, which lay south, and an inch or two west of the other bones, occurred in the same position as that of similar burials I have frequently found in this valley on both sides of the Missouri river. All loose earth and lumps were carefully swept away, and most of the bones and the skull exposed. The latter was resting with face uppermost; a small root the size of a finger had grown through the roof of the mouth and out of the nasal opening, keeping it in that position. The skull was filled with earth. Before removal of this material, ten inches to the southwest

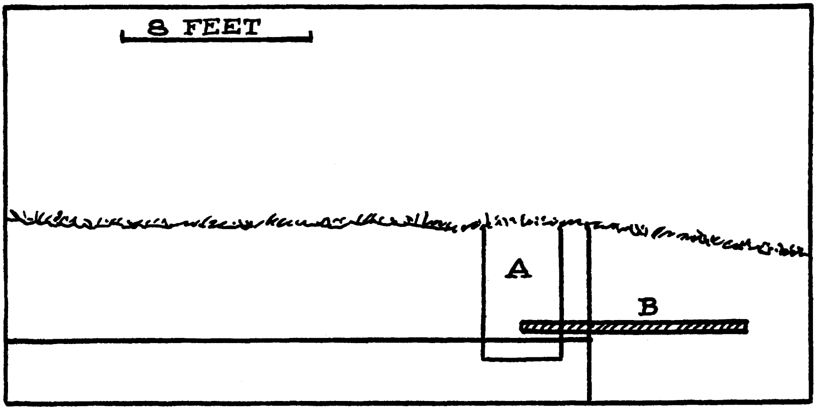

FIG. 32. — North and south cross-section of Long's hill knoll and burial mound. A, Huntington's trench; B, Baked clay area. Below the horizontal line more ancient bones were found extending to the extreme left.

and on the same level all four of the leg bones of another skeleton, with most of the bones of one foot in proper place, were found. Still farther southwest, and on the same level, were the four leg bones of still another skeleton, and all the bones of one foot and several of the other foot lying in proper place. The skeletons lay parallel to one another. On the same level, associated with the bones, were sherds of very thin pottery, one of which showed the markings of a grass-wound paddle, besides a sherd, nearly a quarter of an inch thick, the binder of which is similar to that of pottery fragments I have found on neighboring house sites. There were also a calcined "ivory stone" from a fish head, flakes of charcoal, and pieces of mother-of-pearl — all closely associated with the bones.

The ground upon which the skeletons lay had been baked or hardened by fire. Three of the skeletal parts are calcined, indicating that the bones had been laid upon live coals. With the bones were two small, beautifully made flint scrapers, perfect in outline, skilfully flaked, and altogether similar in material, outline, and workmanship to scrapers from neighboring house sites. These implements were covered with accreted lime, not thicker than ordinary paper, which rubbed off easily between the fingers. A portion of the fired earth or baked clay from beneath the bones where the calcined pieces lay, the pieces of shell, and the flakes of charcoal, some of the latter still embedded in the earth matrix, were carefully preserved. This material I have marked A–II–30–07.[1] (See pl. XI, *a*, *a'*.)

On November 6, I cut a section through the northwestern portion of the Long's hill excavation sunk twelve feet by Professor

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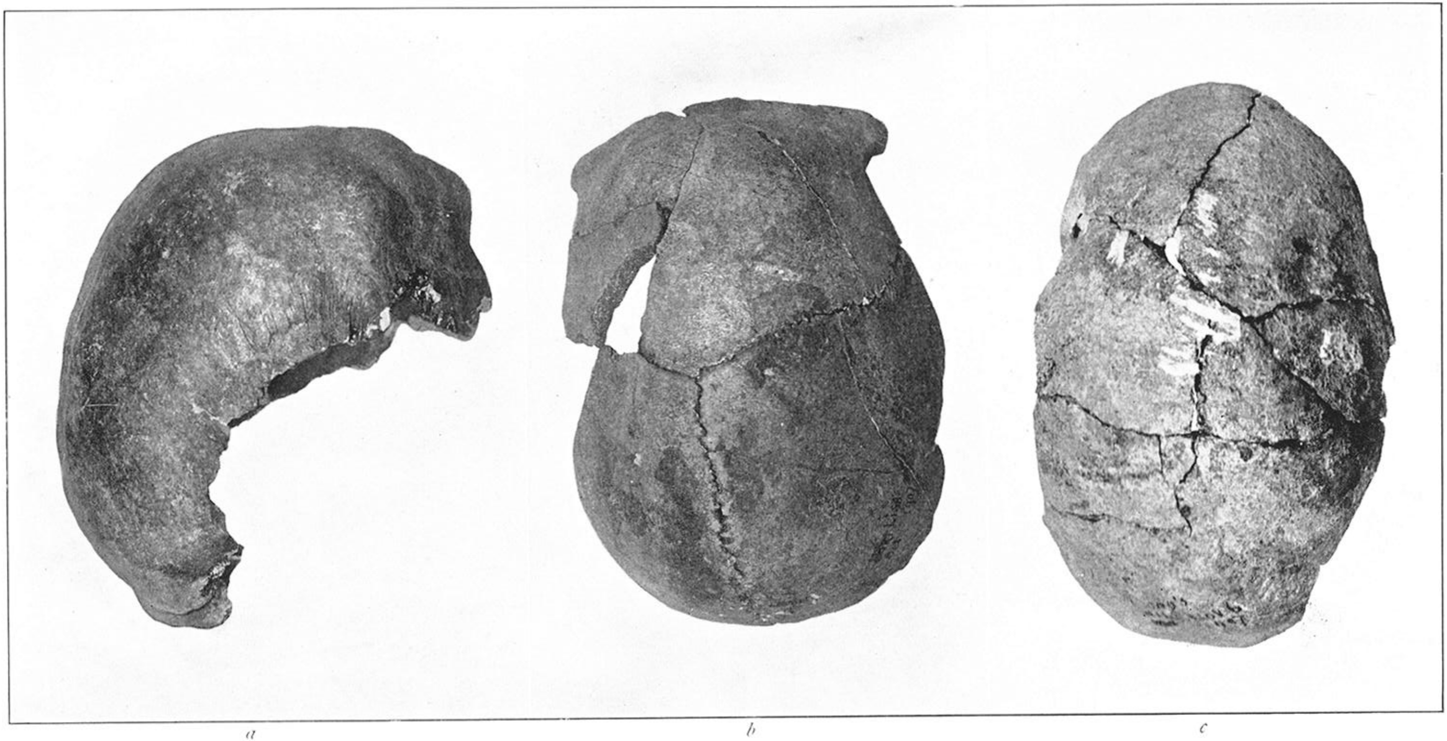
[1] In June 1905, accompanied by E. E. Blackman, archeologist of the Nebraska Historical Society, I found a similar burial on the summit of a high knoll a mile from the railroad station of Crescent, Pottawattamie county, Iowa. Fire had been made on the top of a hill, and the longer bones of the skeleton had been bundled before burial. The bones nearest the fire were thoroughly baked and were very much more blackened than those above them. Beneath this material the ground had been reddened by fire, and in describing it I would say it was baked clay, although in reality it was baked loess — a material of which bricks are made in this neighborhood on both sides of the river. On June 14, 1905, I published in the Omaha *World-Herald* an account of this burial, of which the following is an extract: "Beside the bundle, and three inches east, or north by east, was a human skull. The bones lying nearest the surface were partially burned and showed contact with fire. Those farther down were baked rather than burned. Three sets of bones were found, all of which were in a direction from southeast to northwest."

Barbour and later deepened and widened by Professor Shimek. My operations with a geologist's hook and trowel at various times during the year had filled in the deepest part about two feet. At the exact point where I had seen Professor Shimek resting his left hand while wielding a short-handled "cotton hoe" with his right, in sector P of Professor Barbour's ground-plan (fig. 30), I thrust my spade through the upper part of a femur which lay apparently east and west. This led to my cross-sectioning that part of the hill toward the northwest. The femur lay about seven feet beneath the original surface. My method of work consisted of carefully cutting down the face of the section after the manner of a terrace. A foot above and a foot west of the femur, and at a distance of eighteen feet from the center of the Barbour plan, were several crude stone blades heavily incrusted with lime. Four inches beneath the stones were several fractured skeletal parts, some lying east and west while others lay at right angles to them. Two small broken femora were next found, lying beside a fractured jaw. The former were partially covered with an accretion of lime, but the parts were easily fitted together, making two almost complete bones, although apparently not belonging to the same skeleton. Both, however, are cut, and gnawed by animals. These two bones appear to be pitted on all sides, showing surfaces much rougher than any other bones found in the hill up to that time. The lower jaw retained three molars and two premolars. Two of the molars were worn mostly on the outer side, while the other three teeth were worn chiefly on the inner side. Four teeth lay near the jaw.

A large block was next cut out from the right of the terrace, revealing, seven feet from the original surface, the back of a skull. Protruding from the earth filling the skull was a crude unflaked flint blade, heavily incrusted, like the skull, with lime. Of the skull the frontal, parietal, and a small portion of the occipital alone remained. The outer surface is much pitted, and the inner surface is very heavily accreted with lime. Most of the supraorbital ridges have been cut or gnawed away. This material is numbered II–6–07. (See pl. IX, *c*.)

On November 10 I carried the excavation farther northwestward until well outside the 30-foot circle of Professor Barbour's plan. In



SKULLS FROM LONG'S HILL AND VICINITY, NEBRASKA sector O, nineteen feet from its center and at a depth of six feet, were encountered two badly shattered skulls, with low, retreating frontals and heavy supraörbital ridges. Of neither skull was a piece found as large as the palm of the hand. Each seemed to have laid on the side, one above the other. A dozen skeletal parts, also badly fractured, lay near the skulls, and with them were parts of four skulls of infants. Close beside these bones were what Professor Barbour identifies as the united or coössified metatarsals of a mule deer. This material is numbered II–10–07.

On November 17, assisted by Messrs S. P. Hughes and J. B. Gallatin, who have also rendered valued assistance in the mound work at Fort Lisa, I commenced operations again on the south side of the excavation. Clearing a space five feet square and five feet deep, fragments of shell and charcoal flakes were found.

On the same day considerable work was done outside the northwestern edge of the 30-foot circle (Barbour plan), in sector O, commencing where operations ceased November 10. At a depth of six feet from the original surface, a number of fractured skeletal parts were found. No root or gopher holes marred the simplicity of soil construction. The bones were the upper part of a femur, and some pieces of tibia and humeri. These bones lay 20 to 21 feet from the center of the Barbour plan.

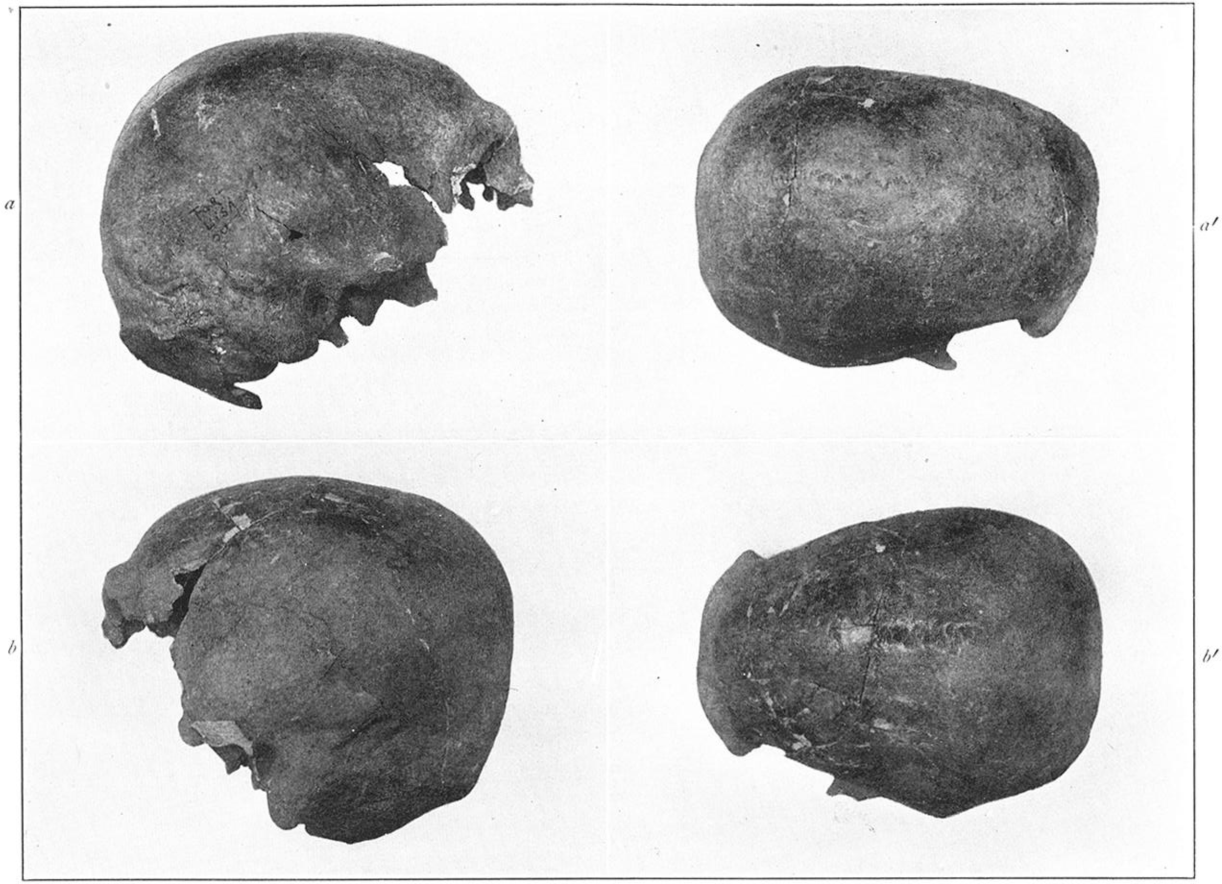
On November 24, again assisted by Messrs Hughes and Gallatin, the wide and deep northwestern excavation was extended five feet farther west and two feet northward, at which point were found one skull, fractured but not scattered (twenty-six parts of this skull have been restored; see pl. XI, *b*, *b′*); one frontal bone, in four parts, a portion of the supraorbital ridge missing; another skull, its frontal minus most of its supraorbital ridges, its occipital lying concave side upward upon its frontal and parietal, which lay with concave side downward; the greater portion of a child's skull which still retains three inches of earth adhering to its concave side. The skeletal parts, including the skulls, were heavily incrusted with lime. This material is numbered II–24–07.

It may be noted that no ancient human crania or skeletal parts have been found south of the center of the ground-plan of Professor Barbour or south of the center of my first east-west trench. The burial material found south of this line may be Mandan, or at least that of the people who occupied the house sites so numerous in the vicinity of Long's hill. After a careful inspection of the knoll from all sides, and especially from its western slope, at various elevations, it has been determined that the burial mound was originally built over the southern part of the knoll. My opinion, based on careful examination of the entire surroundings, is that the center of the original mound was south and a little east of the plan drawn by Professor Barbour (see fig. 31). The most perceptible descent from the knoll is south, bearing easterly, and erosion was more rapid on that side in consequence. Huntington's trench in reality was not in the original center of the mound when the latter was formed, but it was probably the highest point when the Huntington party began operations, because the earth had eroded from the original crest (see A, fig. 32). The contour of the knoll and that of the burial mound can still be traced in outline from a short distance down the western slope with the hill silhouetted against the sky. The burial mound can also be partially traced from inside the excavation.

The material secured November 24 was taken from a six-foot level under a surface which showed no elevation from the surrounding knoll.

In hastily prepared magazine and newspaper articles of a year ago (1906) I made reference to "baked clay" covering the "lower layer" of bones. The specified limits of these articles did not admit of careful description of really important features in connection with the position of the various osseous remains. From time to time there has been made in the press particular and erroneous reference to this burned clay stratum, and I believe a brief description will clear away much of the misunderstanding respecting the mound burial.

"Fire" burial, so called, was not a new or strange feature to me at the beginning of operations at Long's hill. In nearly sixty burials which I have examined on both sides of the Missouri river it was a recorded feature in all but one instance. In every case where fire was noted the skeletal parts were above the ash-bed. I was not surprised to find evidence of fire at Long's hill, nor was the



SKULLS FROM THE VICINITY OF LONG'S HILL, NEBRASKA presence of baked clay at all unusual. What impressed me as unusual was the finding of human bones beneath the baked clay. With the exception of burials by the Omaha tribe (see Note A), it was the first instance in which such a condition had been found.

A thorough examination of the Long's hill burial mound, covering a period of more than twelve months, has determined conclusively that the baked clay area was approximately nine to ten feet in diameter. Some flakes of charcoal were found outside of that limit, it is true, but I have frequently found charcoal and charcoal flakes at various points in this section, two, three, and even ten feet beneath the surface, where no burial mound or house site was near.

Finding some of the older material beneath the baked clay shows that its area extended north of the south side of my initial east-west trench. In order that there could be no question regarding the extent of the stratum, much of my work last autumn was with a view of determining the exact area covered by the baked clay. As much of the northern part of the burial mound had been dug over several times, this was not an easy task. Southwest of the Huntington excavation I was able to expose a good section of the stratum in situ, two inches in thickness, although sometimes less, running out in the hilltop immediately to the west. It extended seven feet south of the point of starting. The distance from the extreme southern point to and a foot beyond where material numbered A–10–30–07 was found lying upon baked clay, with charcoal flakes and calcined human bones, was a fraction short of nine feet. The northeastern part of the area was so broken by repeated digging that an accurate line of demarkation of the baked clay was not obtainable on that side, which should be in sector D of the Barbour plan and in circle No. 2, were it opposite the northwestern extremity of the baked-clay stratum.

In all twenty-five crania or parts representing that number have been taken from all levels of Long's hill.

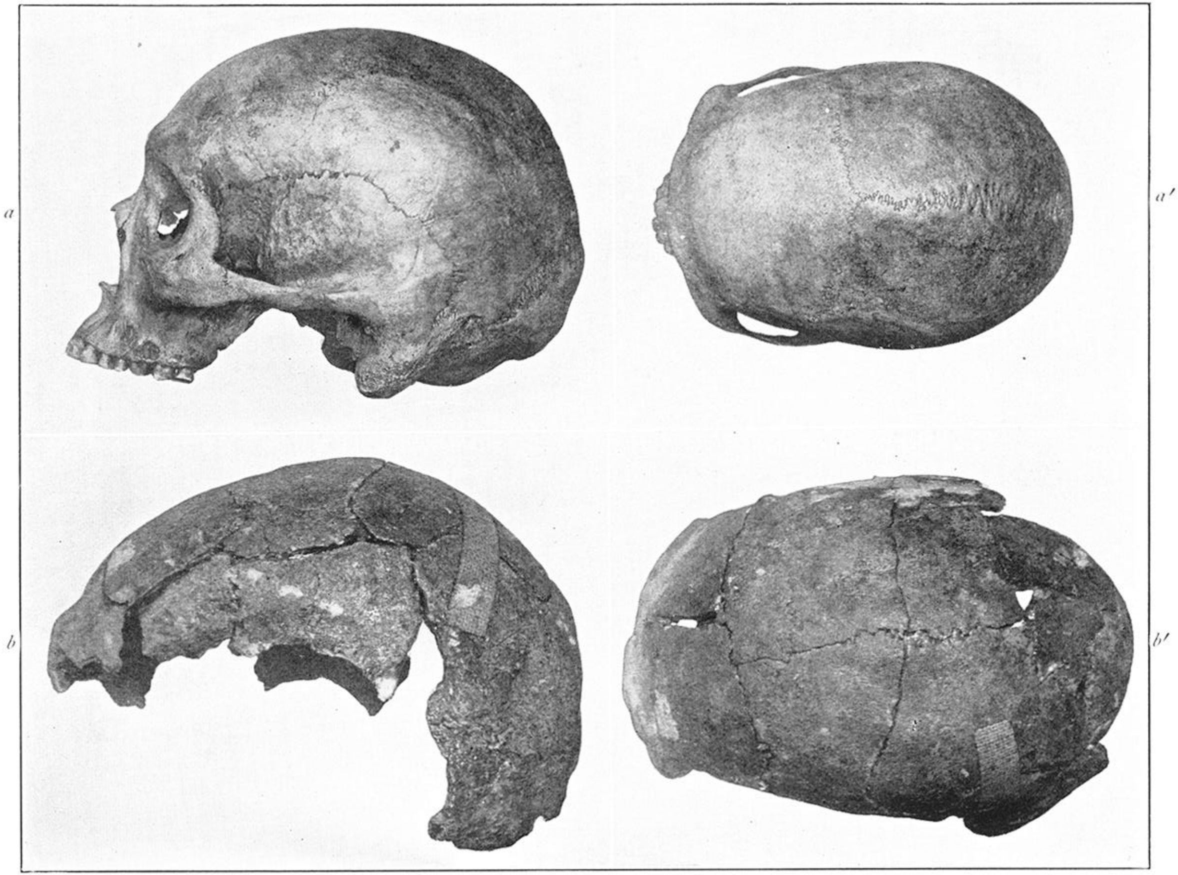
In closing I would call attention to an apparent relationship between the cranial material and the manner of burial of skeletons in Long's hill burial mound and from tumuli at Fort Lisa and the Hovendick farm (See Note B, 1 and 2), and I would also direct especial attention to the sherds and the finely made flint implements associated with the bones in the mound covering the baked-clay area on Long's hill and then to the crude, heavily accreted, unflaked flint and quartzite blades associated with the material called "Loess or Nebraska Man" scattered without order at various depths through the northern part of Long's hill knoll.

POSTSCRIPT

An unusually open winter enabled a continuation of field work to date. After finishing my cross-section of Long's hill in November last, made at the suggestion of Mr Harlan I. Smith, and the determination of the presence of a deposit of fractured bones from six to seven feet beneath the surface, and well outside the tumulus, I worked over the earth inside the excavation, securing several important skeletal parts.

On January 22, 1908, I sunk a trench cross-sectioning the Long's hill ridge fifty feet north of the center of Long's hill excavation in a scarcely perceptible elevation about fifteen feet in diameter. The earth for two feet down consisted of a mixture of dark and light soil. Three feet from the surrounding surface I found a skeleton the bones of which lay north and south. The skull lay toward the north, the occipital reposing upon two bivalve shells, while arranged about and in close proximity to the skull were six other shells. One of the shells is that of a freshwater mussel, the others being very thick and similar to shells I have collected about the Virginia capes. To the west of the skull and shells lay a black flint punch, 3½ by 2½ by 1 inches, which fits the thumb and fingers of the right hand. Just above the punch lay a large barbed arrowhead of flint, similar to arrowheads in my collection from the valley of the Mississippi and known as the "Mound-builder" type. Neither of these two flints is native to this section.

The anterior portion of the skull is wanting, only about two-thirds of the frontal bone being present. The two femora, a portion of two pelves, a dozen disintegrated vertebræ, and some bits of ribs were saved. The femora were reversed in position, and the pelves lay at the southern end of the burial. The position of the bones of this burial was similar to that of the burials on the burned-clay area of Long's hill burial mound, except that the skull lay at the



SKULLS FROM LONG'S HILL, NEBRASKA

north. The earth beneath the bones was unmoved loess, and it appeared as if the latter had been laid on the top of the hill.

The femora are unusually heavy, and compare well with the femora from the baked-clay area of Long's hill burial mound. This material is numbered I–22–08.

On January 26, 1908, accompanied by Messrs Gallatin and Hughes, I dug another cross-section 44 feet north of the work last described, and in the same ridge. At about the same depth were found the remains of a female Indian skeleton ; the skull, which is entire, is low-browed, and most of the skeletal parts procured correspond well with the skeleton found a few days before. Fractured drift spalls, flint scrapers, and a shell ornament were found with the human remains.

NOTES

NOTE A.— A hundred yards south of Ponca creek, Douglas county, Nebraska, near the base of one of the higher bluffs bordering the river valley and twenty rods immediately west of the site of the old trading post of John P. Cabanne (see fig. 29), thirty feet above the valley road, in the late fall of 1906, I commenced operations in a low mound which had been partially explored by unknown parties. The hole which had been dug was on the northern slope of the elevation. Immediately south of this excavation, a foot beneath the black vegetal mold, I found evidence of fire. The earth (loess) had been burned until a soft brick somewhat more than twelve inches square had resulted. The baked portion was reddish orange in color and four to five inches in thickness. Four inches beneath the baked clay (loess) were three iron spear-points, a knife blade six inches long, and, lying beside it, a handle for the latter, made from the rib of some large animal. This handle had three holes pierced through near one end which fit opposite three holes in the haft portion of the knife blade, indicating that the rib had been fastened to one side of the blade by rivets or bolts. Five brass rings, probably bracelets, lay a few inches beneath the blades. Four feet beneath the implements reposed a skeleton at full length, or the longer bones of a skeleton, with the skull and lower jaw. Six inches of finely powdered earth (loess) covered the bottom of the grave, which was six feet long by two feet wide. A dozen glass beads, some blue and others black, lay in the dust, and just beneath the bones was a round rifle bullet, similar to that used in an old-fashioned flintlock rifle, suggesting a tragedy. The remains were more than three feet beneath the fired earth. The burial was similar to Omaha burials of historic times, and the development of the cranium indicates an Omaha Indian. Roynon C. Jones, my nephew, and George C. Clark, stepson, assisted in this work, designated in my field notes as B–II–06.

NOTE B 1. — Early in June, 1907, a farmer named Hovendick, while plowing for corn on the summit of a plateau 100 feet above the Missouri river valley, in Washington county, Nebraska, twenty miles north of the city of Omaha, turned up a number of human bones. With a spade he succeeded in unearthing five human crania. Word of the "find" reached me the next day, and accompanied by Mr Thomas Osterman, editor of the *Blair Democrat*, I visited the Hovendick place. At the point where the farmer had dug up the skulls no elevation above the surrounding surface was noticeable. His operations in recovering the five skulls almost destroyed a number of others and factured many skeletal parts, but I was able to save two fairly well preserved crania of a type similar to those recovered by the farmer. These remains were within six inches of the surface. Thirty paces north of where Hovendick had found the first bones, he plowed out others, but these, fortunately, were not further disturbed. Within four inches of the surface at the latter point I uncovered a section four feet square, revealing a stratum of bones eighteen inches thick. Those nearest the surface had been broken by tillage, but the ones farther down appeared to be laid with some degree of regularity in bundles. The marginal limits of the bone bed could not be determined because of lack of sufficient time. Three fairly good crania and many skeletal parts were procured, and at the time I was compelled to leave there were six other crania in sight. One of the femora was thrust through an occipital. There was a fairly well developed supraorbital ridge in these skulls, and a somewhat depressed frontal. Near the surface I obtained a modern Indian frontal bone, presumably that of a young woman, showing good eminences, no marked supraorbital ridges, and moderately thick skull walls. The lower stratum of skulls differed materially from that described in Note A. No evidence of contact with whites was found.

NOTE B 2. — In Washington county, Nebraska, three miles north of Long's hill and the Ponca Creek district, on a ridge which extends northwest from "Fort Lisa," where Manuel de Lisa established his first trading post, occurs a succession of well-defined mounds that cap the ridge at intervals of 100 yards throughout its entire length. Experience has taught me that these eminences are artificial, and excavation that they contain human bones. The Fort Lisa mounds are similar to those that may be seen for miles along the crest of the river bluffs on both sides of the Missouri. Early in the spring of 1907 I noted human bones in a cornfield in which some of the Fort Lisa mounds are situated. Our first work resulted in finding a large number of human bones upon a slight eminence under only fourteen inches of earth. The plow had disturbed many of them, but two distinctly marked layers were noted. The crania from both layers were broken into many pieces, and although handled with extreme care, only two of ten skulls approached entirety when taken from their wrappings. These two exhibit widely different types, and on one the marks of fire appear. Four skulls from the upper layer had probably been buried intrusively. Two of the broken skulls have been partially articulated or restored, and they do not exhibit the type indicated by the present-day Omaha Indian. They have quite heavy supraorbital ridges, thick cranial walls, and very slight frontal eminences, if any. All the deeper skeletal material lay in bundles: the longer bones close together like a bundle of fagots, with the skull invariably at the southwestern end and a little to the side. Many calcined bones were procured; with them were flakes of charcoal, chips of white or grayish flint, and calcined limestone spalls. In working over an irregular circle twelve feet in diameter twenty-one frontal bones were noted. Other skeletons remain undisturbed, the owner of the property objecting to further excavation. (See pl. IX, *a*, *b*, and pl. X.)

North of the burial just described the mounds are a prominent feature of the landscape. The slight elevation of the mound last mentioned is readily explained. The ridge, like all others skirting the valley, is the site of the old trail, which had been used for ages by Indians until a deep depression had been worn. Following the Americans came voyageurs, trappers, emigrants, and lumbermen. There was no road along the bottoms then, for the river washed the foot of the bluff and prevented travel there. The ridge was the only possible trail, hence the white man's road followed the Indian trail along the ridge. Twenty-five years ago, when the river left its western bluffs, this ridge road was abandoned and a better thoroughfare was made at the foot of the bluffs. Then came the farmer, whose plow further cut the mounds. In fact the man who plowed the field last, informed me that, having experienced much trouble with the little eminences, he had plowed much deeper here than elsewhere in order to level them. To the north of the cornfield the old ridge trail just misses the mounds, and today they are several feet higher than the surrounding backbone of the ridge.

OMAHA, NEBRASKA.